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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,619	11/27/2001	Fumio Abe	1190-0531P	8233
2292	7590	01/13/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			COLON, GERMAN	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,619

Applicant(s)

ABE ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The Amendment, filed on October 15, 2003, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeuchi (EP 0 572 192) in view of Murata (JP 06-168677).

Ikeuchi discloses a deflection yoke apparatus comprising:

a saddle-type coil bobbin 2 having a front end portion and a rear end portion (see Fig. 10);

first guide grooves formed in an inner surface of said coil bobbin and extending across the front end portion and the rear end portion (see Fig. 10);

at least one second guide groove formed at the outer surface of the front end portion;

at least one third guide groove formed at the outer surface of the rear end portion; and

a multi-wire conductor wound around said coil bobbin, the conductor being routed through said first guide grooves, said at least one second guide groove, and said at least one third guide groove.

Ikeuchi is silent regarding the limitation of “said second guide groove and third guide groove having a width in a range of 1.0 to 1.5 times a diameter of said conductor”.

However, in the same field of endeavor, Murata discloses a deflection yoke having guide grooves in a range of 1.0 to 1.5 times a diameter of a conductor in order to improve the deflecting efficiency by regulating a coil winding position in an accurate manner, reducing winding deviation of the coil, reducing dispersion of coil distribution with every deflection yoke and reducing the possibility of generating corona discharge (see paragraphs [0011] and [0012]). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide guiding grooves in a range of 1.0 to 1.5 times a diameter of the conductor with the purpose of improving the deflecting efficiency by regulating a coil winding position in an accurate manner, reducing winding deviation of the coil, reducing dispersion of coil distribution with every deflection yoke and reducing the possibility of generating corona discharge.

The Examiner notes that Murata teaches to provide a groove satisfying the relation $W_1 < W_3 < W_1 + W_0$, where W_1 is the width of the multi-wire conductor, W_3 is the width of the groove, and W_0 is the width of a wire of the multi-wire conductor (see paragraph [0010]). Murata further teaches the multi-wire conductor comprising at least two wires. For a case where the multi-wire conductor comprises at least two wires, and considering the width of said multi-wire conductor as 1, then the width W_3 of the groove lies in a range given by $1 < W_3 < 1.5$.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeuchi-Murata as applied to claim 1 above, and further in view of Osinga et al (US 4,484,166).

Ikeuchi-Murata discloses the claimed invention but is silent regarding the limitation of “said at least one second guide groove is one of a plurality of second guide grooves aligned in parallel and said at least one third guide groove is one of a plurality of third guide grooves aligned in parallel”.

However, in the same field of endeavor, Osinga discloses a deflection yoke with a plurality of guide grooves aligned in parallel with the purpose of allowing the adjustment of the length of the coils of the two deflection coil systems independently of each other at the values desired for a given deflection unit-display tube combination, which is important for realizing automatic convergence (see Col. 4, lines 64-68, and Col. 5, lines 1-2). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a plurality of grooves aligned in parallel in order to allow the adjustment of the length of the coils of the two deflection coil systems independently of each other at the values desired for a given deflection unit-display tube combination, which is important for realizing automatic convergence.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christiana et al. (US 3,601,731) in view of Hirota et al. (JP 01-151134).

Christiana discloses a deflection yoke apparatus **100** comprising:

a saddle-type coil bobbin having a front end portion and a rear end portion (see Fig. 1);

first guide grooves formed in an inner surface of said coil bobbin and extending across the front end portion and the rear end portion (see Fig. 2);

at least one second guide groove **136** formed at the outer surface of the front end portion;
and

at least one third guide groove **138** formed at the outer surface of the rear end portion.

Christina fails to disclose the limitations of “a multi-wire conductor wound around said saddle-type coil bobbin having a substantially circular cross section” and “wherein said at least one second groove and said at least one third guide groove have a width in a range of 1.0 to 1.5 times a diameter of said conductor”.

However, in the same field of endeavor, Hirota discloses a deflection yoke comprising a multi-wire conductor having a substantially circular cross-section, said multi-wire conductor being wound around a saddle-type bobbin with the purpose of improving the winding precision by bundling in parallel multiple conductor fine wires without being untangled, therefore reducing winding deviation of the coil, reducing dispersion of coil distribution with every deflection yoke and reducing the possibility of generating corona discharge. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multi-wire conductor disclosed by Hirota, since Hirota teaches said multi-wire conductor improves the winding precision by bundling in parallel multiple conductor fine wires without being untangled, therefore reducing winding deviation of the coil, reducing dispersion of coil distribution with every deflection yoke and reducing the possibility of generating corona discharge.

Christiana-Hirota is silent regarding the limitation of “said at least one second groove and said third guide groove having a width in a range of 1.0 to 1.5 times a diameter of said conductor”. However, it would have been obvious to one person skilled in the art to provide said at least one second groove and said at least one third groove with a width of at least 1 time a

diameter of said multi-wire conductor in order for the multi-wire conductor to be positioned in said grooves. Thus, Christiana-Hirota teaches a width W in a range ≥ 1 time the diameter of said conductor.

Allowable Subject Matter

6. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation of “the conductor being wound in layers that are placed one over the other in the second guide groove in such a way that when a preceding one of adjacent layers is formed, the conductor is routed through a preceding one of adjacent ones of the plurality of second grooves and a preceding one of adjacent ones of the plurality of third guide grooves, and when a following one of the adjacent layers is formed, the conductor is routed through a following one of the adjacent ones of the plurality of second grooves and a following one of the adjacent ones of the plurality of third guide grooves”.

Response to Arguments

8. Applicant's arguments filed October 15, 2003 have been fully considered but they are not persuasive.

Applicant argues that Ikeuchi (EP 0 572 192) does not teach or suggest at least one second guide groove formed at the outer surface of the front end portion and at least one third guide groove formed at the outer surface at the rear end portion of the saddle coil bobbin (see Remarks, Page 7, lines 10-13).

However, Ikeuchi discloses a second guide groove formed at the outer surface of the front end portion (see upper side of Fig. 10, groove formed between structures **3A** and **3B**) and a third guide groove formed at the outer surface at the rear end portion of the saddle coil bobbin (see lower side of Fig. 10, groove formed between structures **3B** and **3A**). Further, Col. 5, lines 27-32, and Col. 7, lines 7-9 disclose cross-over grooves formed at the front and rear outer surfaces of the bobbin.

Applicant argues that Murata (JP 06-168677) fails to disclose second and third guide grooves on the outer surface of the front and rear end portion of the bobbin (see Remarks, Page 7, lines 14-15).

The Examiner notes that Murata is relied upon for the teachings of improving the deflecting efficiency of the deflection yoke of Ikeuchi, by regulating a coil winding position in an accurate manner, reducing winding deviation of the coil, reducing dispersion of coil distribution with every deflection yoke and reducing the possibility of generating corona

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discharge. Ikeuchi discloses second and third guide grooves on the outer surface of the front and rear end portion of the bobbin.

Applicant argues that the multi-wire conductor of Murata has a substantially rectangular cross section which is contrary to applicant's claimed circular cross section (see Remarks, Page 7, line 20 to Page 8, line 7).

However, the Examiner notes that claims 1 and 2 do not claim a multi-wire conductor having a substantially circular cross section. The limitation of the multi-wire conductor having a circular cross section is claimed only on claims 3 and 4.

Applicant argues that Christiana (US 3,601,731) fails to teach or suggest at least one second guide groove formed at the outer surface of the front end portion and at least one third guide groove formed at the outer surface at the rear end portion of the saddle coil bobbin (see Remarks, Page 9, lines 2-6), and that there is no indication of the conductors being laid substantially side by side.

However, Fig. 1 in view of Fig. 3, clearly shows a second guide groove formed at the outer surface of the front end portion and a third guide groove formed at the outer surface at the rear end portion of the saddle coil bobbin (see also Col. 2, lines 48-49). Further, Fig. 6B (see Col. 4, lines 26-29) discloses the conductors being laid substantially side by side.

Applicant argues that Hirota (JP 01-151134) fails to disclose second and third guide grooves on the outer surface of the front and rear end portion of the bobbin.

The Examiner notes that Hirota is relied upon for the teachings of improving the winding precision by bundling in parallel multiple conductor fine wires without being untangled,

therefore reducing winding deviation of the coil, reducing dispersion of coil distribution with every deflection yoke and reducing the possibility of generating corona discharge.

For the reasons stated above, the rejection of claims 1-3 is deemed proper.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

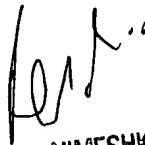
Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is (571) 272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gc


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SUPERVISORY PATENT EXAMINER
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